

DOCUMENT 25/2

Questions relating to Order/Class Group nomenclature in the Class  
Echinoidea

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(Enclosure to a letter dated 4th January 1957)<sup>1</sup>

**Editorial Note :** What was substantially the same paper as that here reproduced was published by the present authors under the title "A Classification of Echinoids" in January 1957 (*J. Palaeont.* 31 (No. 1) : 242-272). The paper as here reproduced differs from that already published by the authors in that they have (a) corrected one erroneous date (that for Echinidae Claus), (b) added seventeen names previously omitted and (c) have changed the treatment accorded to twenty other names. Particulars of the changes so made were communicated to the Office of the Commission by Mr. Melville on behalf of his co-author and himself in a letter dated 20th November 1957. The revisions so made by the authors affect their conclusions as set out on pages 267-270 of the paper referred to only in that the Order name Stereosomata Duncan, 1889, is now made a junior objective synonym of Echinidae Claus, 1880, and is not regarded as an available name. (Int'l'd 23rd January 1958. F.H.)

In considering the names to be used in the *Treatise of Invertebrate Paleontology* for taxa in the Order/Class-group in the Echinoidea, the writers compiled as complete a list as possible of the relevant names. These lists were then considered in the light of the decisions of the Fourteenth International Congress of Zoology, Copenhagen, 1953, relating to names in the Order/Class-group (*Copenhagen Decisions zool. Nomencl.*, 1953, Decisions 59-69, pp. 38-43).

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The Decisions referred to envisaged the setting-up of committees of specialists in each group to consider Order/Class-group nomenclature. Since no committee is yet in being to review the subject so far as the Class Echinoidea is concerned, it seems best to us to publish the lists that we have compiled in the *Bulletin of Zoological Nomenclature*, so that other specialists can criticize our conclusions and supplement our lists prior to the establishment of an *Official List of Names in the Order/Class-group* in Echinoidea. We are grateful to the Secretary of the International Commission on Zoological Nomenclature for his support and for the opportunity he gives us of getting our difficulties more widely discussed. We therefore state the terms of reference that we have adopted and set forth the problems that we have met, and append the lists of names.

2. Our lists exclude all names that have been proposed in the vernacular and all those consisting of more than one word, even if correctly latinized. They include only latinized names referred to recognized categories (Suborder, Order, Superorder, Subclass, Class) and latinized names not formally categorized but readily recognizable as equivalent to names in the recognised categories, as well as names qualified by unaccepted terms such as "Grade" or "Tribe".

3. All names in the Order/Class-group have been treated as nomenclatorially co-ordinate to a limited extent; that is, a name introduced for a taxon at one level in the group is regarded as available with its original authorship and priority at all other levels in the group (with appropriate change of termination). We find, however, that to adopt the corollary of nominate sub-taxa would lead to the loss of well-established names. We have assumed that a nominal genus selected as type-genus of a nominal taxon at any level in the Order/Class-group must *ipso facto* be type-genus of a taxon at every lower level in the group, as well as of taxa at every level in the Family-group. This procedure seems to us a logical extension of Article 29.

4. Some familiar Order/Class-group names in the Echinoidea were first proposed in the Family-group, but have since become attached to taxa in the Order/Class-group. For instance, the names Regularia and Irregularia were first used by Latreille, 1825, as Subfamily-names; they were first applied to taxa in the Order/Class-group by Carus (1863) and have been used by later authors (including Mortensen, 1935) as Subclass-names with attribution to Latreille. Again, the familiar Order-name Clypeasteroida has generally been attributed to L. Agassiz, 1836, although his original name was in the vernacular ("les Clypéastres") without any category-name. We give both these sorts of names priority only from their first usage in latinized form for taxa in the Order/Class-group. Historically, the Phylum Echinodermata was for long regarded as a Class (by one author until at least 1857) and the Class Echinoidea as an Order, so that names in the Order/Class-group are generally of later origin than names in the Family-group as such.

5. We have extended Article 34 (the Law of Homonymy) in a strict sense in that we have considered only the first use of each word ; but we have not regarded a difference in termination as creating a condition of homonymy. In this we disagree with *Copenhagen Decisions* paragraph 68(1) because we feel that it is better to use the terminations now generally standardized in the Echinoidea and to dispose of similar words with different terminations by means of objective synonymy. Only identical words have been treated as homonyms.

6. The majority of Order/Class-group names in the Echinoidea have been formed from the name of an included genus, partly because many of them were first proposed as Family-names. This fact has an obvious influence on the selection of the type-genus. There are also names formed from the names of what we consider marginal genera or *nomina dubia* (see *Copenhagen Decisions* para. 62(3)(a) ; names formed from generic names modified by the addition of a prefix ; and names formed from the name of a morphological character thought to indicate relationship between the forms endowed with it. Names of this last kind are relatively few and have generally been short-lived in practice. It will probably be found that in each major taxon, Order/Class-group names will tend more and more to have been formed in accordance with a single principle—in the Phylum Arthropoda, for instance, names formed from the names of morphological characters are obviously prevalent in current usage. We suggest that the International Commission might recommend that, in future, new Order/Class-group names should be formed in accordance with the principle prevailing in the taxon in question. We regard this not as a restriction of taxonomic freedom, but as an extension of the power of control over the mode of formation of names in the Family-group already embodied in Article 4.

7. Following *Copenhagen Decisions* paragraph 62(4) we have tried to provide an available name for every currently-recognised taxon. We seek clarification of the question whether this paragraph means that every accepted nominal taxon must have a different type-genus. If two mutually exclusive nominal taxa exist at the same level, we see no objection to their having the same type-genus. For example, the Class Echinoidea is currently divided into two Subclasses in two different ways. Mortensen (1935) recognizes the Subclasses Regularia and Irregularia ; Durham and Melville (1957) recognize the Subclasses Perischoechinoidea and Euechinoidea. These four names, with type-genera as chosen by us, are :—

Perischoechinoidea McCoy, 1849—*Palaechinus* McCoy, 1844

Euechinoidea Bronn, 1860—*Echinus* Linnaeus, 1758

Regularia Carus, 1863—*Echinus* Linnaeus, 1758

Irregularia Carus, 1863\*—*Spatangus* Leske, 1778

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\* It will be seen from the lists of names below that we regard the names Regularia and Irregularia as objective junior synonyms of Endocyclica Bronn, 1860 and Exocyclica Bronn, 1860, respectively.

We hope that our selection of the nominal genus *Echinus* Linnaeus, 1758, as type-genus both of Euechinoidea Bronn, 1860 and of Regularia Carus, 1863 will meet with the approval of our colleagues. Since it is inconceivable that any taxonomic scheme would use both Euechinoidea and Regularia as Subclass-names, we see no objection to a state of objective synonymy existing between them. Any scheme that used both names would apply them to taxa at different levels. This objective synonymy is in effect inevitable if we have correctly applied the meaning of Article 29 in Paragraph 3 above.

8. It is not clear from *Copenhagen Decisions* paragraph 62(3)(b) what is to be done with unwanted names that become objective senior synonyms of names that are to be added to the *Official Lists*. We favour, as the least equivocal course, the use of the Plenary Powers to suppress these names.

9. We have extended Article 30(e)( $\alpha$ ) in assuming that the type-genus of a nominal taxon in the Order/Class-group must be selected from among the genera explicitly included in the taxon by the author of the name at the time when he first proposed it. If this is rigidly construed, then two names in the Echinoidea will have to be preserved although they serve no useful taxonomic purpose and were from the beginning subjective junior synonyms of existing names. The nominal Order Nodostomata Lambert, 1915 has as type by monotypy the nominal genus *Amblypygus* L. Agassiz, 1840 (the only nominal genus mentioned in connection with the name Nodostomata when this was first proposed). *Amblypygus* is subjectively a member of the Order Cassiduloida Claus, 1880 (as interpreted by Mortensen, 1948). The name Nodostomata is proposed by Lambert in a more or less casual manner in a discussion of the differences between *Amblypygus* and *Echinoneus* Leske, 1778, which is subjectively a member of the Order Holoctypoida Duncan, 1889, but for which Lambert (1915) proposed the Suborder-name Globatoroida in a similarly casual manner. When next used (Lambert, 1918), the nominal Order Nodostomata included two Suborders, Procassiduloida Lambert, 1918 and Spatangoida; the former contains, among others, the nominal genera *Amblypygus* and *Procassidulus* Lambert and Thiéry, 1918. This latter name was proposed as a substitute name for *Cassidulus* Lamarck, 1801, which was held to be invalid as a homonym of *Cassidula* Humphrey, 1797. Apart from the fact that there is not a true condition of homonymy in this case, the work in which the name *Cassidula* was published (the anonymous *Museum Calonnianum*) was ruled as not available for nomenclatorial purposes in *Opinion* 51. The type-species of *Cassidulus* is *C. cariboeorum* Lamarck, 1801, and under Article 30(f) and *Declaration* 27 this must also be the type-species of *Procassidulus*, in spite of the original designation of *Echinites lapiscancrici* Leske, 1778. The most satisfactory course would be to use the Plenary Powers to designate the nominal genus *Cassidulus* Lamarck, 1801, as type-genus both of the nominal Suborder Procassiduloida Lambert, 1918, and of the nominal Order Nodostomata Lambert, 1915; if our selection of *Cassidulus* as type-genus of the nominal Order Cassiduloida is upheld, then both Procassiduloida and

Nodostomata will become objective junior synonyms of Cassiduloida. Another generic name will then have to be found for the group of species of which *Echinites lapiscancræ* Leske, 1778, is one. Again in 1918, the nominal Suborder Globatoroida includes the nominal genus *Globator* L. Agassiz, 1840, which was presumably the source of the Order-group name. *Globator* is regarded by many specialists as a *nomen dubium*, possibly a subjective junior synonym of the nominal genus *Pyrina* Desmoulins, 1835. If *Globator* can be ruled type-genus of Globatoroida, then both the generic name and the Order-group name can be dealt with under the procedure laid down for *nomina dubia* in *Copenhagen Decisions*, paragraph 26.

### Chronological list of names in the Order/Class-group in Echinoidea

Echinodermata Leske, 1778. Used as an unnamed category (above Order) for all echinoids, but not apparently including any other Echinoderms. The name is now used as the name of a Phylum and we do not propose to consider it in the Order/Class-group.

Echinus Leske, 1778. Listed as an Order. *Echinus* Linnaeus, 1758. Although Leske's name is homonymous with the name of the type-genus, it is clear that he adopted it as the name of a Linnean Order to include all echinoids in a sense quite distinct from his (and Linnaeus's) use of the generic name. We propose to adopt it, in the form Echinoidea, as the Class-name.

Catocysti Leske, 1778. Proposed as a "Class" below Order. *Echinocyamus* Van Phelsum, 1774. Subjective senior synonym of Clypeastridae A. Agassiz, 1873.

Pleurocysti Leske, 1778. Proposed as a "Class" below Order. *Spatangus* Leske, 1778. Objective senior synonym of Spatangidea Claus, 1876.

Echinodermata Wad, 1803. Proposed as a second-rank category under "Class Zoophyta". See Echinodermata Leske, 1778.

Anocysti Parkinson, 1811. Proposed as a "Class" below Order. *Cidaris* Leske, 1778. Objective senior synonym of Cidaridae Claus, 1880.

Catocysti Parkinson, 1811. Proposed as a "grand division" below Order. *Echinocyamus* Van Phelsum, 1774. See Catocysti Leske, 1778.

Pleurocysti Parkinson, 1811. Proposed as a "Class" below Order. *Spatangus* Leske, 1778. See Pleurocysti Leske, 1778.

Echinodermia Rafinesque, 1815. Proposed as a Suborder. See Echinodermata Leske, 1778.



- Radiaria Rafinesque, 1815. This name represents a taxonomic concept (that all animals possessing radial symmetry are directly related) which no longer claims any acceptance. It is suggested that specialists in the groups concerned should jointly petition the International Commission for its suppression.
- Echini Goldfuss, 1820. Proposed as an Order. *Echinus* Linnaeus, 1758. Objective junior synonym of *Echinus* Leske, 1778.
- Echinida Fleming, 1822. Proposed as a "Tribe" under "Order I" which was not named. *Echinus* Linnaeus, 1758. Objective junior synonym of *Echinus* Leske, 1778.
- Enmesostomi Parkinson, 1822. Proposed as a first-rank category (unnamed) below Order. *Cidaris* Leske, 1778. Objective senior synonym of Cidarideae Claus, 1880.
- Apomesostomi Parkinson, 1822. Proposed as a first-rank category (unnamed) below Order. *Spatangus* Leske, 1778. Objective senior synonym of Spatangidea Claus, 1876.
- Echinata Fischer von Waldheim, 1823. Proposed as an Order. *Echinus* Linnaeus, 1758. Objective junior synonym of *Echinus* Leske, 1778.
- Echinoderma Latreille, 1825. Proposed as a Class. See Echinodermata Leske, 1778.
- Echinoida Latreille, 1825. Proposed as an Order. *Echinus* Linnaeus, 1758. Objective junior synonym of *Echinus* Leske, 1778.
- Echinides Stark, 1828. Proposed as a "Section" under Class Echinodermata. *Echinus* Linnaeus, 1758. Objective junior synonym of *Echinus* Leske, 1778.
- Echinidae Fleming, 1828. Unnamed second-rank category below Order, but including all echinoids. *Echinus* Linnaeus, 1758. Objective junior synonym of *Echinus* Leske, 1778.
- Anocysti Fleming, 1828. Proposed as a third-rank category (unnamed) below Order. *Cidaris* Leske, 1778. Objective senior synonym of Cidarideae Claus, 1880.
- Catocysti Fleming, 1828. Proposed as a third-rank category (unnamed) below Order. *Echinocyamus* Van Phelsum, 1774. See Catocysti, Leske, 1778.
- Pleurocysti Fleming, 1828. Proposed as a third-rank category (unnamed) below Order. *Spatangus* Leske, 1778. See Pleurocysti Leske, 1778.
- Echinidea Blainville, 1834. Proposed as an Order. *Echinus* Linnaeus, 1758. Objective junior synonym of *Echinus* Leske, 1778.

- Pedicellata Griffith and Pidgeon, 1834. Proposed as an Order, to include both the Echinoidea and Asterozoa of current usage. This name should be transferred for consideration in the Phylum-group, as representing a Subphylum.
- Cirri-Spinigrada Forbes, 1841. Proposed as an Order. *Echinus* Linnaeus, 1758. Objective junior synonym of Echinus Leske, 1778.
- Adelostella T. and T. Austin, 1842. Proposed as a Class. *Echinus* Linnaeus, 1758. Objective junior synonym of Echinus Leske, 1778.
- Columnidae T. and T. Austin, 1842. Proposed as an Order. This originally included echinoids, crinoids, cystoids and blastoids and does not represent any useful taxonomic concept. In addition, it is a potential homonym of a Family-name in Gastropoda for the genus *Columna* Perry, 1811. Columnidae T. and T. Austin should be suppressed.
- Echinidae T. and T. Austin, 1842. Described as an Order. *Echinus* Linnaeus, 1758. Objective senior synonym of Euechinoidea Bronn, 1860.
- Perischoechinida McCoy, 1849. Described as an Order. *Palaechinus* McCoy, 1844. To be added to *Official List* as Subclass-name Perischoechinoidea.
- Echinoidea d'Orbigny, 1852 and all subsequent usages. Proposed as an Order. *Echinus* Linnaeus, 1758. Objective junior synonym of Echinus Leske, 1778. This is the first use known to us of exactly this spelling (i.e. that currently used for the Class-name) for a taxon in the Order/Class-group including all Echinoids.
- Perischoechinoidea Bronn, 1860. Proposed as an Order. *Palaechinus* McCoy, 1844. Objective junior synonym of Perischoechinida McCoy, 1849.
- Euechinoidea Bronn, 1860. Proposed as an Order. *Echinus* Linnaeus, 1758. To be added to *Official List* as a Subclass-name.
- Endocyclica Bronn, 1860. Proposed as a Suborder. *Echinus* Linnaeus, 1758. to be added to *Official List* as Subclass-name. This, with the following name, are the first latinized names known to us which represent the taxonomic concept usually expressed by the terms "Regularia" and "Irregularia".
- Exocyclica Bronn, 1860. Proposed as a Suborder. *Spatangus* Leske, 1778. To be added to *Official List* as Subclass-name.
- Typica Carus, 1863. Proposed as a first-rank category (unnamed) below Class. *Echinus* Linnaeus, 1758. Objective junior synonym of Euechinoidea Bronn, 1860.
- Regularia Carus, 1863. Proposed as a second-rank category (unnamed) below Class. *Echinus* Linnaeus, 1758. Objective junior synonym of Endocyclica Bronn, 1860.

- Irregularia Carus, 1863. Proposed as a second-rank category (unnamed) below Class. *Spatangus* Leske, 1778. Objective junior synonym of Exocyclica Bronn, 1860.
- Palechinida Haeckel, 1866. Proposed as a Subclass. *Palaechinus* McCoy, 1844. To be added to *Official List* as Order Palaechinoidea.
- Autechinida Haeckel, 1866. Proposed as a Subclass. *Echinus* Linnaeus, 1758. Objective junior synonym of Euechinoidea Bronn, 1860.
- Melonitida Haeckel, 1866. Proposed as an Order. *Melonites* Norwood and Owen, 1846 (*non* Lamarck, 1822), replaced by *Melonechinus* Meek and Worthen, 1860. Since this name was formed from the name of an invalid generic homonym, it would be best considered stillborn. Since there are not as yet any rules that state that this must be the case, the best alternative is to suppress the name on the grounds that it has never been re-employed and is not used in any existing taxonomic scheme.
- Eocidarida Haeckel, 1866. Proposed as an Order. *Palaechinus* McCoy, 1844. Objective junior synonym of Palechinida Haeckel (of which it was originally only a part).
- Desmosticha Haeckel, 1866 and all subsequent usages. Proposed as an Order. *Echinus* Linnaeus, 1758. Objective junior synonym of Endocyclica Bronn, 1860.
- Petalosticha Haeckel, 1866, and all subsequent usages. Proposed as an Order. *Spatangus* Leske, 1778. Objective junior synonym of Exocyclica Bronn, 1860.
- Clypeastridae A. Agassiz, 1873. Proposed as a Suborder. *Clypeaster* Lamarck, 1801. To be added to *Official List* as Order Clypeasteroidea. As explained elsewhere (Durham, 1955), the alteration of the stem of this name by the insertion of an e is considered a valid emendation on etymological grounds and in order to conform with all other names of the stem of which the Greek word *κλύπη* forms a part.
- Clypeastridea Claus, 1876. Proposed as an Order. *Clypeaster* Lamarck, 1801. Objective junior synonym of Clypeastridae A. Agassiz, 1873.
- Spatangidea Claus, 1876. Proposed as an Order. *Spatangus* Leske, 1778. To be added to *Official List* as Order Spatangoida.
- Palechinoidea Zittel, 1879 and all subsequent usages. Proposed as a Subclass. *Palaechinus* McCoy, 1844. Objective junior synonym of Perischoechinida McCoy, 1849.
- Cystocidaridae Zittel, 1879. Proposed as an Order. *Cystocidaris* Zittel, 1879, an unnecessary nom. nov. for *Echinocystites* Wyville Thomson, 1861. The ordinal name is an objective senior synonym of Echinocystoidea Jackson, 1912.



- Bothriocidaridae Zittel, 1879. Proposed as an Order. *Bothriocidaris* Eichwald, 1869. To be added to *Official List* as Order Bothriocidaroida. This name is sometimes attributed to Schmidt, (F.), 1874, but he did not name the taxon, although he recognized the taxonomic need for one.
- Perischoechinidae Zittel, 1879. Proposed as an Order. *Palaechinus* McCoy, 1844. Objective junior synonym of Palechinida Haeckel, 1866.
- Regulares Zittel, 1879. Proposed as an Order. *Echinus* Linnaeus, 1758. Objective junior synonym of Endocyclica Bronn, 1860. Zittel gives "Endocyclica Wright" as an alternative name; this presumably refers to Echinoidea Endocyclica Wright, 1857, which is excluded from this list because it consists of more than one word.
- Irregulares Zittel, 1879. Proposed as an Order. *Spatangus* Leske, 1778. Objective junior synonym of Exocyclica Bronn, 1860. Zittel's reference to "Exocyclica Wright" is ignored on the same grounds as are stated in the preceding entry.
- Gnathostomata Zittel, 1879. Proposed as a Suborder. *Clypeaster* Lamarck, 1801. To be added to *Official List* as a Superorder.
- Atelostomata Zittel, 1879. Proposed as a Suborder. *Spatangus* Leske, 1778. To be added to *Official List* as a Superorder.
- Echinothuridae Claus, 1880. Proposed as a Suborder. *Echinothuria* Woodward, 1863. To be added to *Official List* as Order Echinothurioida.
- Cidaridae Claus, 1880. Proposed as a Suborder. *Cidaris* Leske, 1778. To be added to *Official List* as Order Cidaroida.
- Echinidae Claus, 1880. Proposed as a Suborder. *Echinus* Linnaeus, 1758. To be added to *Official List* as Order Echinoida (the nominate Order of Echinus Leske, 1778).
- Clypeastroideae Claus, 1880. Proposed as an Order. *Clypeaster* Lamarck, 1801. Objective junior synonym of Clypeastridae A. Agassiz, 1873.
- Spatangoideae Claus, 1880. Proposed as an Order. *Spatangus* Leske, 1778. Objective junior synonym of Spatangidea Claus, 1876.
- Cassidulidae Claus, 1880. Proposed as a Suborder. *Cassidulus* Lamarck, 1801. To be added to *Official List* as Order Cassiduloida.
- Spatangideae Claus, 1880. Proposed as a Suborder. *Spatangus* Leske, 1778. To be added to *Official List* as Suborder Spatangina.
- Abranchiata Ludwig, 1882. Proposed as an Order. *Cidaris* Leske, 1778. Objective junior synonym of Cidaridae Claus, 1880.
- Branchiata Ludwig, 1882. Proposed as an Order. *Echinus* Linnaeus, 1758. Objective junior synonym of Echinidae Claus, 1880.

- Cidaridea Claus, 1883. Proposed as an Order. *Cidaris* Leske, 1778. Objective junior synonym of Cidarideae Claus, 1880.
- Entobranchiata Ludwig, 1886. Proposed as a Suborder. *Cidaris* Leske, 1778. Objective junior synonym of Cidarideae Claus, 1880.
- Ectobranchiata Ludwig, 1886. Proposed as a Suborder. *Echinus* Linnaeus, 1758. Objective junior synonym of Echinideae Claus, 1880.
- Clypeastroidea Ludwig, 1886. Proposed as an Order. *Clypeaster* Lamarck, 1801. Objective junior synonym of Clypeastridae L. Agassiz, 1873.
- Spatangoidea Ludwig, 1886. Proposed as an Order. *Spatangus* Leske, 1778. Objective junior synonym of Spatangidea Claus, 1876.
- Bothriocidaroida Duncan, 1889. Proposed as an Order. *Bothriocidaris* Eichwald, 1859. Objective junior synonym of Bothriocidaridae Zittel, 1879.
- Cidaroida Duncan, 1889. Proposed as an Order. *Cidaris* Leske, 1778. Objective junior synonym of Cidarideae Claus, 1880.
- Cystocidaroida Duncan, 1889. Proposed as an Order. See Cystocidaridae Zittel, 1879.
- Plesiocidaroida Duncan, 1889. Proposed as an Order. *Tiarechinus* Neumayr, 1881. To be added to *Official List* as an Order.
- Diadematoida Duncan, 1889. Proposed as an Order. *Diadema* Gray, 1825. To be added to *Official List* as Superorder Diadematacea and as name of its nominate Order.
- Holactypoida Duncan, 1889. Proposed as an Order. *Holactypus* Desor, 1842. To be added to *Official List* as an Order.
- Clypeastroidea Duncan, 1889. Proposed as an Order. *Clypeaster* Lamarck, 1801. Objective junior synonym of Clypeastridae A. Agassiz, 1873.
- Cassiduloidea Duncan, 1889. Proposed as a Suborder. *Cassidulus* Lamarck, 1801. Objective junior synonym of Cassidulideae Claus, 1880.
- Spatangoida Duncan, 1889. Proposed as an Order. *Spatangus* Leske, 1778. Objective junior synonym of Spatangidea Claus, 1876.
- Streptosomata Duncan, 1889. Proposed as a Suborder. *Echinothuria* S. Woodward, 1863. Objective junior synonym of Echinothurideae Claus, 1880.
- Stereosomata Duncan, 1889. Proposed as a Suborder. *Echinus* Linnaeus, 1758. Objective junior synonym of Echinideae Claus, 1880.
- Palaeoechinida Perrier, 1893. Proposed as an Order. *Palaeochinus* McCoy, 1844. Objective junior synonym of Perischoechinida McCoy, 1849.

- Neoechinoidea Perrier, 1893. Proposed as an Order. *Echinus* Linnaeus, 1758.  
Objective junior synonym of Euechinoidea Bronn, 1860.
- Cystechinida or Cystoechinoidea [sic] Haeckel, 1896. Proposed as a Subclass.  
See Cystocidaridae Zittel, 1879.
- Promelonaria Haeckel, 1896. Proposed as an Order. *Cystocidaris* Zittel, 1879  
(= *Echinocystites* Wyville Thomson, 1861). Objective senior synonym  
of Echinocystoida Jackson, 1912.
- Eumelonaria Haeckel, 1896. Proposed as an Order. See Melonitida Haeckel,  
1866.
- Palechinida or Palaeoechinoidea or Perischoechnoidea [sic] Haeckel, 1896.  
Proposed as a Subclass. *Palaechinus* McCoy, 1844. Objective junior  
synonyms of Perischoechnida McCoy, 1849.
- Stenopalmaria Haeckel, 1896. Proposed as an Order. *Bothriocidaris* Eichwald,  
1859. Objective junior synonym of Bothriocidaridae Zittel, 1879.
- Eurypalmaria Haeckel, 1896. Proposed as an Order. *Palaechinus* McCoy, 1844.  
Objective junior synonym of Palechinida Haeckel, 1866.
- Desmosticha = Cidaronia [sic] Haeckel, 1896. Proposed as a Legion or Order.  
*Cidaris* Leske, 1778. Objective junior synonym of Cidaridae Claus,  
1880.
- Cidaridaria Haeckel, 1896. Proposed as an Order or Suborder. *Cidaris* Leske,  
1778. Objective junior synonym of Cidaridae Claus, 1880.
- Diademaria Haeckel, 1896. Proposed as an Order or Suborder. *Diadema* Gray,  
1825. Objective junior synonym of Diadematoidea Duncan, 1889.
- Anthosticha = Clypeastronia [sic] Haeckel, 1896. Proposed as a Legion or  
Order. *Clypeaster* Lamarck, 1801. Objective junior synonyms of  
Clypeastridae A. Agassiz, 1873.
- Conoclyparia = Holoctypida [sic] Haeckel, 1896. Proposed as an Order or  
Suborder. *Holoctypus* Desor, 1842. Objective junior synonyms of  
Holoctypoida Duncan, 1889.
- Scutellaria Haeckel, 1896. Proposed as an Order or Suborder. *Scutella*  
Lamarck, 1816. To be added to *Official List* as Suborder Scutellina.
- Petalosticha = Spatangonia [sic] Haeckel, 1896. Proposed as a Tribe or  
Order. *Spatangus* Leske, 1778. Objective junior synonyms of  
Spatangidea Claus, 1876.
- Cassidularia or Cassiduloidea [sic] Haeckel, 1896. Proposed as an Order or  
Suborder. *Cassidulus* Lamarck, 1801. Objective junior synonyms of  
Cassidulidae Claus, 1880.
- Spatangaria Haeckel, 1896. Proposed as an Order or Suborder. *Spatangus*  
Leske, 1778. Objective junior synonym of Spatangidea Claus, 1876.

- Palaeo-echinoidea Parker and Haswell, 1897. Proposed as an Order. *Palaechinus* McCoy, 1844. Objective junior synonym of Perischoechinida McCoy, 1849.
- Calycina Gregory, 1900. Proposed as a Suborder. *Salenia* Gray, 1835. To be added to *Official List* as Suborder.
- Diademina Gregory, 1900. Proposed as a Suborder. *Diadema* Gray, 1825. To be added to *Official List* as Suborder.
- Arbacina Gregory, 1900. Proposed as a Suborder. *Arbacia* Gray, 1835. To be added to *Official List* as Order-name Arbacioida and as name of its nominate Suborder.
- Echinina Gregory, 1900. Proposed as a Suborder. *Echinus* Linnaeus, 1758. To be added to *Official List* as Suborder.
- Holotypina Gregory, 1900. Proposed as a Suborder. *Holotypus* Desor, 1842. To be added to *Official List* as Suborder.
- Clypeastrina Gregory, 1900. Proposed as a Suborder. *Clypeaster* Lamarek, 1801. To be added to *Official List* as Suborder-name Clypeasterina.
- Asternata Gregory, 1900. Proposed as a Suborder. *Cassidulus* Lamarek, 1801. Objective junior synonym of Cassidulideae Claus, 1880.
- Sternata Gregory, 1900. Proposed as a Suborder. *Spatangus* Leske, 1778. Objective junior synonym of Spatangidea Claus, 1876.
- Gnathostomata Lambert, 1900 (*non* Zittel, 1879). Proposed as a Subclass. *Echinus* Linnaeus, 1758. Objective junior synonym of Euechinoidea Bronn, 1860. Homonym of Gnathostomata Zittel, 1879.
- Plagiocysta Lambert, 1900. Proposed as an Order. *Echinocystites* Wyville Thomson, 1861. Objective senior synonym of Echinocystoida Jackson, 1912.
- Pileatoida Lambert, 1900. Proposed as a Suborder. *Holotypus* Desor, 1842. Objective junior synonym of Holotypoida Duncan, 1889.
- Exocysta Lambert, 1900. Proposed as an Order. *Clypeaster* Lamarek, 1801. Objective junior synonym of Clypeastridae A. Agassiz, 1873.
- Stereodermata Lambert, 1900. Proposed as an Order. *Echinus* Linnaeus, 1758. Objective junior synonym of Echinideae Claus, 1880.
- Echinidia Delage and Hérouard, 1903. Proposed as a Class. *Echinus* Linnaeus, 1758. Objective junior synonym of Echinus Leske, 1778.
- Regulariae Delage and Hérouard, 1903. Proposed as a Subclass. *Echinus* Linnaeus, 1758. Objective junior synonym of Endocyclica Bronn, 1860.
- Irregulariae Delage and Hérouard, 1903. Proposed as a Subclass. *Spatangus* Leske, 1778. Objective junior synonym of Exocyclica Bronn, 1860.

- Echinothurida Delage and Hérourard, 1903. Proposed as an Order. *Echinothuria* S. Woodward, 1863. Objective junior synonym of Echinothurideae Claus, 1880.
- Cidarida Delage and Hérourard, 1903. Proposed as an Order. *Cidarid* Leske, 1778. Objective junior synonym of Cidarideae Claus, 1880.
- Diademida Delage and Hérourard, 1903. Proposed as an Order. *Diadema* Gray, 1825. Objective junior synonym of Diadematoida Duncan, 1889.
- Diademina Delage and Hérourard, 1903. Proposed as a Tribe (below Order). *Diadema* Gray, 1825. Objective junior synonym of Diademina Gregory, 1900.
- Salenina Delage and Hérourard, 1903 (as Salelina in Contents). Proposed as a Tribe (below Order). *Salenia* Gray, 1835. Objective junior synonym of Calycina Gregory, 1900.
- Cyphosomina Delage and Hérourard, 1903. Proposed as a Tribe (below Order). *Cyphosoma* L. Agassiz, 1838 (*non* Mannerheim, 1837) = *Phymosoma* Haime, 1853. Invalid senior objective synonym of Phymosomina Mortensen, 1904.
- Holcotypida Delage and Hérourard, 1903. Proposed as an Order. *Holcotypus* Desor, 1842. Objective junior synonym of Holcotypoida Duncan, 1889.
- Clypeastrida Delage and Hérourard, 1903. Proposed as an Order. *Clypeaster* Lamarck, 1801. Objective junior synonym of Clypeastridae A. Agassiz, 1873.
- Spatangida Delage and Hérourard, 1903. Proposed as an Order. *Spatangus* Leske, 1778. Objective junior synonym of Spatangidea Claus, 1876.
- Endobranchiata Meissner, 1903. Unnamed category "A I" equivalent to Order. *Cidarid* Leske, 1778. Objective junior synonym of Cidarideae Claus, 1880.
- Phymosomina Mortensen, 1904. Proposed as a Suborder. *Phymosoma* Haime, 1853. To be added to *Official List* as Order Phymosomatoida.
- Protosternata Mortensen, 1907. Proposed as a Suborder. *Collyrites* Desmoulins, 1835. To be added to *Official List*.
- Meridosternata Mortensen, 1907. Proposed as a Suborder. *Holaster* L. Agassiz, 1836. To be added to *Official List*.
- Amphisternata Mortensen, 1907. Proposed as a Suborder. *Spatangus* Leske, 1778. To be added to *Official List*.
- Echinocystoida Jackson, 1912. Proposed as an Order. *Echinocystites* Wyville Thomson, 1861. To be added to *Official List* as Echinocystitoida (to conform with stem of name of type-genus).



- Centrechinoidea Jackson, 1912. Proposed as an Order. *Diadema* Gray, 1825. Objective junior synonym of Diadematoidea Duncan, 1889.
- Aulodonta Jackson, 1912. Proposed as a Suborder. *Diadema* Gray, 1825. Objective junior synonym of Diademina Gregory, 1900.
- Stirodonta Jackson, 1912. Proposed as a Suborder. *Phymosoma* Haime, 1853. Objective junior synonym of Phymosomina Mortensen, 1904.
- Camarodonta Jackson, 1912. Proposed as a Suborder. *Echinus* Linnaeus, 1758. Objective junior synonym of Echinina Gregory, 1900.
- Exocycloidea Jackson, 1912. Proposed as an Order. *Spatangus* Leske, 1778. Objective junior synonym of Exocyclica Bronn, 1860.
- Brachygnata Lambert, 1915. Proposed as an Order. *Echinoneus* Leske, 1778, by monotypy. Objective senior synonym of Echinoneina Clark, 1925.
- Globatoroidea Lambert, 1915. Proposed as a Suborder. *Echinoneus* Leske, 1778, by monotypy. Objective senior synonym of Echinoneina Clark, 1925.
- Nodostomata Lambert, 1915. Proposed as an Order. *Amblypygus* L. Agassiz, 1840, by monotypy. Subjective junior synonym of Cassidulideae Claus, 1880.
- Procassiduloida Lambert, 1918, ex Lambert, 1915, (*nomen nudum*). Proposed as a Suborder. *Procassidulus* Lambert and Thiéry, 1918. Subjective junior synonym of Cassidulideae Claus, 1880.
- Nucleolitoida Hawkins, 1920. Proposed as an Order. *Nucleolites* Lamarck, 1801. To be added to *Official List*.
- Echinoneina H. L. Clark, 1925. Proposed as a Suborder. *Echinoneus* Leske, 1778. To be added to *Official List*.
- Melonechinoidea Mortensen, 1934. Proposed as an Order. *Palaechinus* McCoy, 1844. Objective junior synonym of Palechinida Haeckel, 1866.
- Lepidocentroida Mortensen, 1934. Proposed as an Order. *Echinocystites* Wyville Thomson, 1861. Objective junior synonym of Echinocystoidea Jackson, 1912.
- Pseudoechinoidea Mortensen, 1935. Proposed as a Subclass. *Bothriocidaris* Eichwald, 1859. To be added to *Official List*.
- Hemicidarina Beurlen, 1937. Proposed as a Suborder. *Hemicidaris* L. Agassiz, 1838. To be added to *Official List* as Order Hemicidaroida.
- Megalopoda Macbride and Spencer, 1938. *Eothuria* Macbride and Spencer, 1938, which is not certainly an echinoid.
- Aspidodiademina Mortensen, 1939. Proposed as a Suborder. *Aspidodiadema* A. Agassiz, 1879. To be added to *Official List*.

- Pedinina Mortensen, 1939. Proposed as a Suborder. *Pedina* L. Agassiz, 1838.  
To be added to *Official List*.
- Orthopsina Mortensen, 1942. Proposed as a Suborder. *Orthopsis* Cotteau, 1864. To be added to *Official List*.
- Temnopleurina Mortensen, 1942. Proposed as a Suborder. *Temnopleurus* Duncan, 1889. To be added to *Official List* as Order Temnopleuroida.
- Cassidulina Mortensen, 1948. Proposed as a Suborder. *Cassidulus* Lamarck, 1801. Objective junior synonym of Cassidulideae Claus, 1880.
- Conoclypina Mortensen, 1948. Proposed as a Suborder. *Conoclypus* L. Agassiz, 1839. To be added to *Official List*.
- Laganina Mortensen, 1948. Proposed as a Suborder. *Laganum* Link, 1807. To be added to *Official List*.
- Scutellina Durham, 1955. Proposed as a Suborder. *Scutella* Lamarck, 1816. Objective junior synonym of Scutellaria Haeckel, 1896.
- Rotulina Durham, 1955. Proposed as a Suborder. *Rotula* Schumacher, 1817. To be added to *Official List*.
- Holasteroidea Durham and Melville, 1957. Proposed as an Order. *Holaster* L. Agassiz, 1836. To be added to *Official List*.

**Alphabetical List of Names in the Order/Class-Group  
in the Class Echinoidea**

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| Abranchiata Ludwig, 1882           | Branchiata Ludwig, 1882             |
| Adelostella T. and T. Austin, 1842 | Brachygnata Lambert, 1915           |
| Amphisternata Mortensen, 1907      | Calyceina Gregory, 1900             |
| Anocysti Parkinson, 1811           | Camarodonta Jackson, 1912           |
| Anocysti Fleming, 1828             | Cassidularia Haeckel, 1896          |
| Anthosticha Haeckel, 1896          | Cassidulideae Claus, 1880           |
| Apomesostomi Parkinson, 1822       | Cassidulina Mortensen, 1948         |
| Arbacina Gregory, 1900             | Cassiduloidea Duncan, 1889          |
| Aspidodiademina Mortensen, 1939    | Catocysti Leske, 1778               |
| Asternata Gregory, 1900            | Catocysti Parkinson, 1811           |
| Atelostomata Zittel, 1879          | Catocysti Fleming, 1828             |
| Aulodonta Jackson, 1912            | Centrechinoida Jackson, 1912        |
| Autechinida Haeckel, 1866          | Cidarida Delage and Hérourard, 1903 |
| Bothriocidaridae Zittel, 1879      | Cidaridaria Haeckel, 1896           |
| Bothriocidaroida Duncan, 1889      | Cidaridea Claus, 1883               |

- Cidarideae Claus, 1880  
 Cidaroida Duncan, 1889  
 Cidaronia Haeckel, 1896  
 Cirrhi-Spinigrada Forbes, 1841  
 Clypeastrida Delage and Hérourard, 1903  
 Clypeastridae A. Agassiz, 1873  
 Clypeastridea Claus, 1876  
 Clypeastrina Gregory, 1900  
 Clypeastroida Duncan, 1889  
 Clypeastroidea Ludwig, 1886  
 Clypeastroideae Claus, 1880  
 Clypeastronia Haeckel, 1896  
 Columnidae T. and T. Austin, 1842  
 Conoclyparia Haeckel, 1896  
 Conoclypina Mortensen, 1948  
 Cyphosomina Delage and Hérourard, 1903  
 Cystechinida Haeckel, 1896  
 Cystocidaridae Zittel, 1879  
 Cystocidaroida Duncan, 1889  
 Cystoechinoidea Haeckel, 1896  
 Desmosticha Haeckel, 1866  
 Diademaria Haeckel, 1896  
 Diadematoidea Duncan, 1889  
 Diademida Delage and Hérourard, 1903  
 Diademina Gregory, 1900  
 Echinata Fischer de Waldheim, 1823  
 Echini Goldfuss, 1820  
 Echinida Fleming, 1822  
 Echinidae Fleming, 1828  
 Echinidae T. and T. Austin, 1842  
 Echinidea Blainville, 1834  
 Echinidea Haeckel, 1896  
 Echinideae Claus, 1880  
 Echinides Stark, 1828  
 Echinidia Delage and Hérourard, 1903  
 Echinina Gregory, 1900  
 Echinocystoida Jackson, 1912  
 Echinoderma Latreille, 1825  
 Echinodermata Leske, 1778  
 Echinodermata Wad, 1803  
 Echinodermia Rafinesque, 1815  
 Echinoida Latreille, 1825  
 Echinoidea d'Orbigny, 1842  
 Echinoneina H. L. Clark, 1925  
 Echinothurida Delage and Hérourard, 1903  
 Echinothurideae Claus, 1880  
 Echinus Leske, 1778  
 Ectobranchiata Ludwig, 1886  
 Emmesostomi Parkinson, 1822  
 Endobranchiata Meissner, 1903  
 Endocyclica Bronn, 1860  
 Entobranchiata Ludwig, 1886  
 Eocidarida Haeckel, 1866  
 Euechinoidea Bronn, 1860  
 Eumelonaria Haeckel, 1896  
 Eurypalmaria Haeckel, 1896  
 Exocyclica Bronn, 1860  
 Exocycloida Jackson, 1912  
 Exocysta Lambert, 1900  
 Globatoroida Lambert, 1915  
 Gnathostomata Zittel, 1879  
 Gnathostomata Lambert, 1900  
 (*non* Zittel, 1879)  
 Hemiecidarina Beurlen, 1937  
 Holasteroida Durham and Melville, 1957  
 Holoctypida Haeckel, 1896  
 Holoctypida Delage and Hérourard, 1903

- Holotypina Gregory, 1900  
Holotypoida Duncan, 1889  
Irregulares Zittel, 1879  
Irregularia Carus, 1863  
Irregulariae Delage and Hérourard, 1903  
Laganina Mortensen, 1948  
Lepidocentroida Mortensen, 1934  
Megalopoda MacBride and Spencer, 1938  
Melonechinoida Mortensen, 1934  
Melonitida Haeckel, 1866  
Meridosternata Mortensen, 1907  
Neoechinoidea Perrier, 1893  
Nodostomata Lambert, 1915  
Nucleolitoida Hawkins, 1920  
Orthopsina Mortensen, 1942  
Palaeoechinida Perrier, 1893  
Palaeo-echinoidea Parker and Haswell, 1897  
Palechinida Haeckel, 1866  
Palechinida or Palaeoechinoidea or Perischoechnoidea Haeckel, 1896  
Palechinoidea Zittel, 1879  
Pedicellata Griffith and Pidgeon, 1834  
Pedinina Mortensen, 1939  
Perischoechinida McCoy, 1849  
Perischoechinidae Zittel, 1879  
Perischoechnoidea Bronn, 1860  
Petalosticha Haeckel, 1866  
Phymosomina Mortensen, 1904  
Pileatoida Lambert, 1900  
Plagiocysta Lambert, 1900  
Plesiocidaroida Duncan, 1889  
Pleurocysti Leske, 1778  
Pleurocysti Parkinson, 1811  
Pleurocysti Fleming, 1828  
Procassiduloida Lambert, 1918  
Promelonaria Haeckel, 1896  
Protosternata Mortensen, 1907  
Pseudoechinoidea Mortensen, 1935  
Radiaria Rafinesque, 1815  
Regulares Zittel, 1879  
Regularia Carus, 1863  
Regulariae Delage and Hérourard, 1903  
Rotulina Durham, 1955  
Salelina Delage and Hérourard, 1903  
Salenina Delage and Hérourard, 1903  
Scutellaria Haeckel, 1896  
Scutellina Durham, 1955  
Spatangaria Haeckel, 1896  
Spatangida Delage and Hérourard, 1903  
Spatangidea Claus, 1876  
Spatangideae Claus, 1880  
Spatangoida Duncan, 1889  
Spatangoidea Ludwig, 1886  
Spatangoidea Duncan, 1889  
Spatangoideae Claus, 1880  
Spatangonia Haeckel, 1896  
Stenopalmaria Haeckel, 1896  
Stereodermata Lambert, 1900  
Stereosomata Duncan, 1889  
Sternata Gregory, 1900  
Stirodonta Jackson, 1912  
Streptosomata Duncan, 1889  
Temnopleurina Mortensen, 1942  
Typica Carus, 1863

**Available Names in the Order/Class-Group in Echinoidea**  
**Class**

Echinoidea Leske, 1778 (as Echinus). Objective junior synonyms Echini Goldfuss, 1820, Echinida Fleming, 1822, Echinata Fischer von Waldheim, 1823, Echinoida Latreille, 1825, Echinidae Fleming, 1828, Echinides Stark, 1828, Echinidea Blainville, 1834, Cirrhi-Spinigrada Forbes, 1841, Adelostella T. and T. Austin, 1842, Echinoidea d'Orbigny, 1852, Echinidia Delage and Hérourard, 1903.

**Subclass**

Endocyclica Bronn, 1860. Objective junior synonyms Regularia Carus, 1863, Desmosticha Haeckel, 1866, Regulares Zittel, 1879, Regulariae Delage and Hérourard, 1903.

Euechinoidea Bronn, 1860. Objective senior synonym, Echinidae T. and T. Austin, 1842. Objective junior synonyms Typica Carus, 1863, Autechinida Haeckel, 1866, Neoechinoidea Perrier, 1893, Gnathostomata Lambert, 1900 (*non* Zittel, 1879).

Exocyclica Bronn, 1860. Objective junior synonyms Irregularia Carus, 1863, Petalosticha Haeckel, 1866, Irregulares Zittel, 1879, Irregulariae Delage and Hérourard, 1903, Exocycloida Jackson, 1912.

Perischoechnoidea McCoy, 1849 (as Perischoechnida). Objective junior synonyms Perischoechnoidea Bronn, 1860, Palechinoidea Zittel, 1879, Palaeoechinida Perrier, 1893, "Palechinida or Palaeoechinoidea or Perischoechnoidea" Haeckel, 1896.

Pseudoechinoidea Mortensen, 1935.

**Superorder**

Atelostomata Zittel, 1879

Diadematacea Duncan, 1889 (as Diadematoidea)

Echinacea Claus, 1880 (as Echinidae)

Gnathostomata Zittel, 1879.

**Order**

Arbacioida Gregory, 1900.

Bothriocidaroida Zittel, 1879 (as Bothriocidaridae). Objective junior synonyms Bothriocidaroida Duncan, 1889, Stenopalmaria Haeckel, 1896.



- Cassiduloida Claus, 1880 (as Cassidulidae). Objective junior synonyms Cassiduloidea Duncan, 1889, Cassidularia Haeckel, 1896, Asternata Gregory, 1900, Procassiduloida Lambert and Thiéry, 1921 ; subjective junior synonym Nodostomata Lambert, 1915.
- Cidaroida Claus, 1880 (as Cidaridae). Objective senior synonyms Anocysti Parkinson, 1822 and Fleming, 1828, Emmesostomi Parkinson, 1822 ; objective junior synonyms Abranchiata Ludwig, 1882, Cidaridea Claus, 1883, Entobranchiata Ludwig, 1886, Cidaroida Duncan, 1889, Desmosticha Haeckel, 1896, Cidaronia Haeckel, 1896, Cidaridaria Haeckel, 1896, Cidarida Delage and Hérourard, 1903, Endobranchiata Meissner, 1903.
- Clypeasteroida A. Agassiz, 1873 (as Clypeastridae). Subjective senior synonyms Catocysti Leske, 1778, Parkinson, 1811 and Fleming, 1828 ; objective junior synonyms Clypeastridea Claus, 1876, Clypeastroidea Claus, 1880, Clypeastroidea Ludwig, 1882, Clypeastroida Duncan, 1889, Anthosticha Haeckel, 1896, Clypeastronia Haeckel, 1896, Exocysta Lambert, 1900, Clypeastrida Delage and Hérourard, 1903.
- Diademata Duncan, 1889. Objective junior synonyms Diademaria Haeckel, 1896, Diademida Delage and Hérourard, 1903, Centrechinoida Jackson, 1912.
- Echinocystitoida Jackson, 1912 (as Echinocystoida). Objective senior synonyms Cystocidaridae Zittel, 1879, Cystocidaroida Duncan, 1889, Promelonaria Haeckel, 1896, Cystechinida-Cystoechinoidea Haeckel, 1896, Plagiocysta Lambert, 1900 ; Objective junior synonym Lepidocentroida Mortensen, 1934.
- Echinoida Claus, 1880 (as Echinidae). Objective junior synonyms Branchiata Ludwig, 1882, Ectobranchiata Ludwig, 1886, Stereosomata Duncan, 1889, Stereodermata Lambert, 1900.
- Echinothurioida Claus, 1880 (as Echinothuridae). Objective junior synonyms Streptosomata Duncan, 1889, Echinothurida Delage and Hérourard, 1903.
- Hemicidaroida Beurlen, 1937.
- Holasteroida Durham and Melville, 1957.
- Holactypoida Duncan, 1889. Objective junior synonyms Conoclyparia Haeckel, 1896, Holactypida Delage and Hérourard, 1903, Pileatoida Lambert, 1900 ; Subjective junior synonyms Brachygnata Lambert, 1915, Globatoroida Lambert and Thiéry, 1921.
- Megalopoda MacBride and Spencer, 1938.
- Nucleolitoida Hawkins, 1920.

Palaechinoida Haeckel, 1866 (as Palechinida). Objective junior synonyms Eocidarida Haeckel, 1866, Perischoechinidae Zittel, 1879, Eurypalmaria Haeckel, 1896, Palaeo-echinoidea Parker and Haswell, 1897, Melon-echinoida Mortensen, 1934.

Phymosomatoida Mortensen, 1904 (as Phymosomina). Objective senior synonym Cyphosomina Delage and Hérourard, 1903; objective junior synonym Stirodonta Jackson, 1912.

Plesiocidaroida Duncan, 1889.

Spatangoida Claus, 1876 (as Spatangidea). Objective senior synonyms Pleurocysti Leske, 1778, Parkinson, 1811, Fleming, 1828, Apomesostomi Parkinson, 1822; objective junior synonyms Spatangideae Claus, 1880, Spatangoideae Claus, 1880, Spatangoida Duncan, 1889, Petalosticha Haeckel, 1896, Spatangonia Haeckel, 1896, Spatangaria Haeckel, 1896, Sternata Gregory, 1900, Spatangida Delage and Hérourard, 1903.

Temnopleuroida Mortensen, 1942.

### Suborder

Amphisternata Mortensen, 1937.

Aspidodiademina Mortensen, 1939.

Calycina Gregory, 1900. Objective junior synonym Salenina ("Salelina") Delage and Hérourard, 1903.

Cassidulina *sensu stricto* (Mortensen, 1948).

Glypeasterina *sensu stricto* (Gregory, 1900, as Clypeastrina).

Conoclypina Mortensen, 1948.

Diademina *sensu stricto* (Gregory, 1900). Objective junior synonym Aulodonta Jackson, 1912.

Echinina *sensu stricto* (Gregory, 1900). Objective junior synonym Camarodonta Jackson, 1912.

Echinoneina H. L. Clark, 1925. Objective senior synonyms Brachygnata Lambert, 1915, Globatoroida Lambert, 1915.

Holeetypina *sensu stricto* (Gregory, 1900).

Laganina Mortensen, 1948.

Meridosternata Mortensen, 1907.

Orthopsina Mortensen, 1942.

Pedinina Mortensen, 1939.

Protosternata Mortensen, 1907.

Rotulina Durham, 1955.

Scutellina Haeckel, 1896 (as Scutellaria).

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